EXHIBIT E

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PATENT

Docket No. 48092.00/3520.0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Bruce D. MARTIN et al.
Serial No.:	08/499,115
Filed:	July 6, 1995
For:	PERSONAL HYGIENE ARTICLES FOR ABSORBING FLUIDS
Examiner:	Ki-O
Group Art Unit:	3308

JUL 23 1997

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BOX AF
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

AMENDMENT UNDER 37 §1.116 EXPEDITED PROCEDURE

In response to the Final Office Action dated May 13, 1997, it is requested that the following amendment and response be entered and considered:

In The Claims:

Cancel Claims 1-16 in their entirety without prejudice or disclaimer.

Claim 23 (amended twice) A method for making an absorbent composite useful for personal hygiene articles which comprises:

treating a [cellulosic] wood fiber pulp with a base at a temperature ranging from about 0° to about 80°C thereby forming a treated [cellulosic] wood fiber pulp;

fluffing the treated wood fiber pulp to form an absorbent sublayer material comprised of fluffed base-treated wood pulp;

providing at least one fluid permeable topsheet layer and at least one substantially fluid impermeable backsheet layer; and

interposing the sublayer material between the topsheet layer and backsheet layer.

REMARKS

Claims 1-16 and 28 are in the case. Claims 1-16 directed to a personal hygiene article are canceled without prejudice in light of the finality of the restriction requirement. Claim 23 is amended to more clearly and distinctly claim the invention. Support for the amendment to Claim 23 can be found in the Specification on page 3, lines 18-20. Thus the claims remaining in the Case are 23-28. No new matter is entered into the case by the above amendment.

Claims 23, 25 and 28 were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent 4,104,214 to Meierhoefer in view of U.S. Patent 5,091,240 to Kajander et al. Claims 24, 26 and 2 were rejected under 35 U.S.C. §103 as being unpatentable over the '214 patent in view of the '240 to Kajander et al. and further in view of U.S. Patent 3,670,731 to Harmon. Applicants acknowledge and appreciate the Examiner's withdrawal of the rejection of Claims 17-22 under 35 U.S.C. §112, second paragraph made in the previous office action.

The rejections are respectfully traversed. Reconsideration and withdrawal of the same are requested in light of the foregoing amendments and the following remarks. As described in more detail below, the cited art fails to suggest treatment of the fibers of a cellulosic pulp with a base in order to form fluffed wood pulp having improved fluid transport properties and incorporation of the fluffed pulp into a personal hygiene article. Fluffing base-treated wood pulp significantly curtails fiber clumping, which has limited the rewettability and liquid transport properties of prior absorbent products containing wood pulp.

A. The Claims Patentably Distinguish Over the Art of Record.

The claimed invention relates to a method for making personal hygiene articles which exhibit the ability to reduce the incidence of clumping and binding after repeated wetting and compression of the layer containing the fibers. In the process, wood fiber pulp is treated with a base at a temperature within the range of from about 0° to about 80°C thereby forming a base-treated wood fiber pulp. The treated pulp is then fluffed to form a fluffed wood pulp consisting of a fibrous mass which is used as a sublayer material. The sublayer is interposed between a topsheet layer formed of

flexible, fluid permeable material and a backsheet layer formed from a substantially fluid-impervious material.

The sublayer material is comprised of one or more layers of fluffed and treated wood fiber pulp which may or may not be separated by tissue or nonwoven materials. Hence, the sublayer material may contain from 10 to about 100 wt.% of fluffed and treated wood fiber pulp and, optionally, unprocessed fiber and/or super-absorbing polymers.

Unlike many of the presently available products, the personal hygiene articles of the invention are capable of maintaining excellent fluid transport properties and fluid retention characteristics even after repeated wetting and absorbing episodes. This is due, at least in part, to the decreased tendency of the fluffed base-treated wood pulp to bind or clump together upon wetting and drying, even if the fibers are compressed.

The sublayer material does not need to be superabsorbent to be effective as a sublayer in a personal hygiene composite. It is only necessary for the sublayer to quickly transport fluid away from the permeable layer, even when already wet. Conventional absorbent articles contain superabsorbent polymers which provide for long term storage of fluids. Despite their absorption capacity, fluids are not quickly transported to the superabsorbent layers of such composites. Applicants' invention improves the fluid transport properties of absorbent products by providing composites containing treated and fluffed wood fiber pulp as a sublayer material which exhibits reduced clumping or matting upon being wetted, maintaining a more open network for enhanced fluid transport during repeated rewetting cycles.

As an initial matter, it is noted that the Examiner referred to a Webster dictionary definition of "fluff". While the definition may be appropriate for the general public, one skilled in the art of pulp processing would recognize the phrase "fluffed pulp" to mean a product consisting of unbonded wood pulp fibers which is produced by dry shredding wood pulp in either web or sheet form. (See Paper Vocabulary, SIS Handbook 146, published by SIS of Stockholm, Sweden, 1980, p. 137, enclosed as Exhibit A). Accordingly, the "fluffed pulp" referred to in the claims is the result of a shredding process conducted on the pulp, not the mere "shaking or patting process"

imagined by the examiner to be occurring in the Meierhoefer viscose process. Applicants' claimed process involving fluffing gives the base-treated wood pulp unique transport properties which are not found in conventional absorbent materials. Accordingly, when considering the process of the claimed invention, it is appropriate to employ the meanings of the terminology as understood by those skilled in the art in order to correctly assess the patentability of the claimed invention. It is believed that when the correct definition for fluffed pulp is used, it will be apparent to the examiner that none of the cited references suggest or describe the claimed invention alone or in any combination thereof.

Turning now to the rejections, the '214 patent describes formation of viscose rayon fibers which requires the formation of an alkali cellulose and the reaction of the alkali cellulose with carbon disulfide to form "soluble sodium xanthate." The xanthated cellulose is dissolved in dilute aqueous sodium hydroxide to form "viscose" which is spun into yarn by extruding the solution through a spinneret.

It is clear from the description of the '214 patent that it is the extruded viscose solution-derived fibers that are being made into an absorbent product, not base-treated and fluffed wood pulp fibers. Applicants' claims specifically call for "fluffing" a base-treated fiber pulp and cannot reasonably be said to be suggested by the '214 patent which teaches dissolving the pulp, leaving nothing to be fluffed! The person of ordinary skill plainly would not find it obvious from the '214 patent to fluff a base-treated wood pulp because the alkali pulp in the '214 patent is dissolved and converted into something else.

The deficiencies of the '214 patent are not cured by the description in the '240 patent. The '240 patent describes a lamination process for incorporating a fibrous layer into a disposable absorbent product. In the '240 patent, the fibers are impregnated with a water-based adhesive to provide adhesive-impregnated layers containing fiber-to-fiber bonds and a hot melt adhesive is then applied to join the adhesive-impregnated layers together. The '240 patent fails to direct one skilled in the art to treat wood fiber pulp with a base and then fluff the treated pulp to form an absorbent sublayer.

Accordingly, even if the rayon fibers from the xanthated solution of the '214 patent were used in the laminated product described in the '240 patent, the product would not inherently possess the properties of Applicants' product since the fibers would not be fluffed base-treated wood fibers according to the method of the claimed invention. Applicants' claimed process requires that the pulp be treated with a base at a temperature ranging from about 0° to about 80°C and that the treated pulp be fluffed. Because these steps are missing from the combination of references, it is plainly erroneous for the Examiner to maintain the rejection of Claims 23, 25 and 28 based on these references.

For the foregoing reasons, it is also error for the Examiner to maintain the rejection of Claims 24, 26 and 27 over the '214 patent in view of the '240 patent and further in view of the '731 patent. The '731 patent relied upon by the Examiner fails to suggest critical steps of the claimed method, namely, base-treating a wood fiber pulp and then fluffing the base-treated wood pulp for production of an absorbent layer. The mere reference in the '731 patent to use of fluffed pulp cannot reasonably be said to suggest use of "base-treated" fluffed pulp.

Applicants do not claim to have invented fluffed wood pulp, and are not attempting to cover all absorbent products containing fluffed wood pulp. What Applicants do claim as a novel and nonobvious process is production of absorbent products containing base-treated fluffed wood fibers which are shown without question in the specification to exhibit dramatically better PSD as compared to untreated fluffed fibers (see Stables 1 and 2). This is not obvious or suggested by the cited combination of references, and there is no valid basis in law to impose any burden on Applicants to demonstrate further the already manifest nonobvious differences between the claimed product and that described in the '731 patent. Tables 1 and 2 of the present specification already show that a mere "fluffed pulp" as mentioned in the '731 patent is vastly inferior in absorbency properties to Applicants' claimed fluffed base-treated wood pulp.

In summary, each patent cited by the Examiner describes absorbent articles made in different ways, however, the references alone or in combination do not suggest Applicants' claimed invention which improves the fluid transport properties of

absorbent composites through use of a base-treated wood fiber fluff as a sublayer. The claims as amended patentably distinguish over the art of record, and should therefore be allowed.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: BOX AF, Assistant Commissioner for Patents, Washington, D.C. 20231

on July 14, 1997
Date

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